

## CLAIMS

What is claimed is:

1           1. A slurry composition comprising abrasive particles  
2           and an oxidizing agent having a static etch rate on metal of  
3           less than 1000 Å per hour; and wherein the pH of the slurry  
4           is about 5 to about 11.

1           2. The slurry composition of claim 1 wherein said  
2           oxidizing agent is present in the composition in amounts of  
3           about 1 g/L to about 100 g/L.

1           3. The slurry composition of claim 1 wherein said  
2           abrasive particles are present in the composition in amounts  
3           of about 0.2 to about 30% by weight.

1           4. The slurry composition of claim 1 wherein said  
2           oxidizing agent is selected from the group consisting of  
3           potassium iodate, sodium iodate, ammonium cerium nitrate and  
4           potassium ferricyanide.

1           5. The slurry composition of claim 1 wherein said  
2           oxidizing agent comprises potassium iodate.

1           6. The slurry composition of claim 1 wherein said  
2           oxidizing agent comprises ammonium cerium nitrate.

1           7. The slurry of claim 1 wherein said abrasive  
2           particles are selected from the group consisting of alumina,  
3           silica, zirconia, ceria, titanium dioxide, ferric oxide and  
4           mixtures thereof.

1           8.    The slurry of claim 1 wherein said abrasive  
2 particles have a particle size of about 10 to about 1000  
3 nanometers.

1           9.    The slurry of claim 1 wherein said abrasive  
2 particles include silica.

1           10.   The slurry of claim 9 wherein said silica is fumed  
2 silica or colloidal silica.

1           11.   The slurry of claim 1 wherein said abrasive  
2 particles include ceria.

1           12.   The slurry of claim 1 being an aqueous slurry.

1           13.   The slurry of claim 10 which further contains an  
2 organic diluent.

1           14.   The slurry of claim 11 wherein said organic  
2 diluent is selected from the group consisting of propylene  
3 carbonate, methanol, ethanol, ethylene glycol, glycerol and  
4 mixtures thereof.

1           15.   The slurry of claim 1 which contains an organic  
2 diluent.

1           16.   The slurry of claim 13 wherein said organic  
2 diluent is selected from the group consisting of propylene  
3 carbonate, methanol, ethanol, ethylene glycol, glycerol and  
4 mixtures thereof.

1           17.   The slurry from claim 1 which further comprises a  
2 surfactant.

1 18. The slurry of claim 1 which further comprises at  
2 least one polymer selected from the group consisting of  
3 polymer of ethylene oxide, polymer of acrylic acid, polymers  
4 of acrylamide, polymers of vinyl alcohol, copolymers thereof  
5 and mixtures thereof.

1 19. A method for polishing a surface, comprising:  
2 providing on said surface a slurry comprising abrasive  
3 particles and an oxidizing agent having a static etch rate  
4 on metal of less than 1000 Å per hour; and wherein the pH of  
5 the slurry is about 6 to about 11;  
6 and polishing said surface by contacting it with a  
7 polishing pad.

1 20. The method of claim 19 wherein said oxidizing  
2 agent is present in the composition in amounts of about 1  
3 g/L to about 100 g/L.

1 21. The method of claim 19 wherein said abrasive  
2 particles are present in the composition in amounts of about  
3 0.2 to about 30% by weight.

1 22. The method of claim 19 wherein said oxidizing  
2 agent is selected from the group consisting of potassium  
3 iodate, sodium iodate and ammonium cerium nitrate, and  
4 potassium ferricyanide.

1 23. The method of claim 19 wherein said oxidizing  
2 agent comprises potassium iodate.

1 24. The method of claim 19 wherein said abrasive  
2 particles are selected from the group consisting of alumina,

3 silica, zirconia, ceria, titanium dioxide, ferric oxide and  
4 mixtures thereof.

1 25. The method of claim 19 wherein said abrasive  
2 particles have a particle size of about 10 to about 1000  
3 nanometers.

1 26. The method of claim 19 wherein said abrasive  
2 particles include silica.

1 27. The method of claim 19 wherein said slurry is an  
2 aqueous slurry.

1 28. The method of claim 27 wherein said slurry further  
2 contains an organic diluent.

1 29. The method of claim 28 wherein said organic  
2 diluent is selected from the group consisting of propylene,  
3 carbonate, methanol, ethanol, ethylene glycol, glycerol and  
4 mixtures thereof.

1 30. The method of claim 19 wherein said slurry  
2 contains an organic diluent.

1 31. The method of claim 30 wherein said organic  
2 diluent is selected from the group consisting of propylene  
3 carbonate, methanol, ethanol, ethylene glycol, glycerol and  
4 mixtures thereof.

1 32. The method of claim 19 which comprises polishing  
2 both metal and dielectric material at substantially the same  
3 polishing rate.

1 33. The method of claim 32 wherein the ratio of  
2 polishing rates of said metal to said dielectric material is  
3 about 1:2 to about 2:1.

1 34. The method of claim 19 wherein said polishing  
2 involves the step of metal CMP which immediately precedes  
3 deposition of the next level dielectric for the purpose of  
4 removing scratches or reducing the effects of erosion on  
5 dense contact pattern areas or both.

1 35. The method of claim 19 wherein said polishing  
2 comprises removing an adhesion promoting or diffusion  
3 barrier layer.

1 36. The method of claim 35 wherein said adhesion  
2 promoting or diffusion barrier layer is at least one  
3 material selected from the group consisting of titanium,  
4 titanium nitride, tantalum and tantalum nitride.

1 37. The method of claim 33 wherein said metal is  
2 selected from the group consisting of aluminum, copper and  
3 tungsten and said dielectric is silicon dioxide.

1 38. The method of claim 19 wherein the speed of said  
2 pad during said polishing is about 10 to about 150 rpm, and  
3 the speed of the wafer carrier is about 10 to about 150 rpm.